

CLAIMS

What is claimed is:

- 5 1. A method for monitoring operational parameters of a system of electrical components, the method comprising the steps of:
- storing in a memory circuit of each component identity data representative of an identity of the respective component in the system;
- sensing operational parameters of each component and processing the sensed parameters in the respective component;
- 10 transmitting the sensed parameters and the identity data of the respective component to a monitoring station; and
- generating a user viewable monitoring display of the parameters by component based upon the sensed parameters and the identity data.
- 15 2. The method of claim 1, wherein the identity data represents a node address of the component.
3. The method of claim 1, wherein the step of storing includes storing physical location data in the memory circuit of each component, and wherein the method includes the further step of generating a user viewable physical layout display for the system based upon the physical location data and the identity data, the monitoring display being accessible to a user from the physical layout display.
- 20 4. The method of claim 1, wherein the monitoring display includes at least one virtual meter indicating a level of a selected parameter.
- 25 5. The method of claim 4, wherein the parameter is selected based upon the identity data.
- 30

6. The method of claim 1, wherein the monitoring display includes at least one virtual historical chart indicating historical levels of a selected parameter.

5 7. The method of claim 6, wherein the parameter is selected based upon the identity data.

8. The method of claim 1, wherein the monitoring display includes a textual display of operating parameters of the component.

10 9. The method of claim 1, wherein the monitoring station is linked to the components via a data network and polls the components over the data network to obtain the sensed parameters and the identity data.

15 10. The method of claim 1, wherein the monitoring station accesses a database for the system to obtain data descriptive of the components, and wherein the monitoring display includes a description of the respective component.

20 11. The method of claim 10, wherein the description includes an image of the respective component.

12. The method of claim 10, wherein the description includes a textual description of the respective component.

25 13. A method for monitoring operational parameters of a plurality of networked electrical components, the method comprising the steps of:

storing in each component identity data and physical layout data, the identity data representative of an identity of the respective component and the physical layout data representative of a physical disposition of the respective component in the system.

sensing operational parameters of the system in each component;

transmitting the sensed parameters, the identity data and the physical layout data to a monitoring station; and

generating a series of user viewable representations including a system view of a physical layout of the system and monitoring views displaying status of operational parameters for selected components.

14. The method of claim 13, wherein the physical layout data includes data representative of physical coordinates of the respective component in the system.

15. The method of claim 13, wherein the identity data includes a standardized code for the component type.

16. The method of claim 13, wherein the monitoring views include virtual graphical displays of the operational parameters.

17. The method of claim 16, wherein the operational parameters depicted in the virtual graphical displays are selected from a set of operational parameters monitored by the respective component.

18. The method of claim 17, wherein the operational parameters depicted in the virtual graphical displays are selected automatically based upon the identity data.

19. The method of claim 16, wherein the virtual graphical displays include a virtual meter.

20. The method of claim 16, wherein the virtual graphical displays include a virtual historical chart of a selected parameter level.

21. The method of claim 13, wherein the monitoring views are accessible from the system view via user actuatable graphical devices.

22. A method for monitoring operational parameters of a plurality of networked electrical component, the method comprising the steps of:

storing in a memory circuit of each component identity data representative of an identity of the respective component in the system;

sensing operational parameters of each component and processing the sensed parameters in the respective component;

transmitting the sensed parameters and the identity data of the respective component to a monitoring station; and

generating a series of user viewable monitoring displays of the parameters by component based upon the sensed parameters and the identity data, the monitoring displays including graphical presentations of parameter levels.

23. The method of claim 22, wherein the graphical presentations represent levels of parameters selected separately for each respective component.

24. The method of claim 23, wherein the parameters represented in the graphical presentations are selected based upon the identity data.

25. The method of claim 23, wherein at least one of the parameters represented in the graphical presentations is user selected.

26. The method of claim 22, wherein the graphical presentations include a virtual meter for a selected parameter level.

27. The method of claim 22, wherein the graphical presentations include a virtual historical chart for a selected parameter level.

28. A method for monitoring operational parameters of a plurality of networked electrical components, the method comprising the steps of:

storing component designation data in a memory circuit of each component;
sensing operational parameters of each component and processing the sensed
parameters in the respective component;
transmitting the sensed parameters to a monitoring station;
5 referencing configuration data for each component from a database based upon the
component designation data; and
generating a series of user viewable monitoring displays of the parameters by
component based upon the sensed parameters and the configuration data, the monitoring
displays including graphical presentations of parameter levels.

10 29. The method of claim 28, comprising the further step of storing component
location data in each component, and wherein the method includes generating a physical
view of a system comprising the components.

15 30. The method of claim 28, wherein parameters are selected for the graphical
presentations based upon the component designation data.

20 31. The method of claim 28, wherein the step of referencing the configuration
data includes accessing data representative of settings for the respective components.

25 32. The method of claim 28, further comprising referencing historical event data
for each component.

30 33. The method of claim 28, wherein the designation data includes a node
address for each component.

35 34. A system for monitoring a plurality of electrical components, the system
comprising:
a network link for accessing parameter data from a plurality of networked electrical
components; and

a monitoring station configured cyclically to access the parameter data via the network link and to generate a user viewable representation of the parameter data including a plurality of virtual meters displaying current and historical levels of selected parameters for each component.

5

35. The system of claim 34, wherein the selected parameters for each component are determined by default from designation data for each component.

10

36. The system of claim 34, wherein the selected parameters for each component include at least one user selected parameter.

37. The system of claim 34, wherein the user viewable representation includes a display of parameter settings for the respective components.

15

38. The system of claim 34, wherein the user viewable representation is updated following cyclic access of the parameter data by the monitoring station.

20

39. The system of claim 34, further comprising a database accessible by the monitoring station, the database including component data descriptive of the components, and wherein the user viewable representation includes descriptive indicia based upon the component data.

25

40. The system of claim 34, wherein the user viewable representation includes historical event data for each component.

41. A system for monitoring operational parameters in an electrical control network, the system comprising:

a plurality of electrical control or monitoring components adapted to control or monitor delivery of electrical power to a load, each component including a memory object storing component designation data;

30

a data network coupled to the components for transmitting parameter data;
a monitoring station coupled to the data network for accessing the parameter data
from the components and configured to display a series of user viewable representations of
the parameter data by component based upon the accessed parameter data and the
5 designation data.

42. The system of claim 41, wherein the monitoring displays including
graphical presentations of parameter levels.

10 43. The system of claim 41, wherein the components include a motor starter.

44. The system of claim 41, wherein the components include a variable
frequency motor controller.

15 45. The system of claim 41, wherein the components include an overload relay.

46. The system of claim 41, wherein the memory object of each component
stored physical location data for the respective component in the network, and wherein the
monitoring station is configured to generate a physical view of the components based upon
the physical location data.
20

47. The system of claim 46, wherein the user viewable representations of the
parameter data are accessible by a user from the physical view.

25 48. The system of claim 41, wherein the user viewable representations include
graphical representations of levels of selected parameters for each component.

49. The system of claim 48, wherein the graphical representations include
virtual meters displaying current levels of selected parameters.
30

50. The system of claim 48, wherein the graphical representations depict historical levels of selected parameters.

5 51. The system of claim 48, wherein the selected parameters are default parameters based upon a classification of each component.

52. The system of claim 48, wherein at least one of the selected parameters is user selected.